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## (54) Protective device for clothing and other fabrics

(57) A disposable protecting device such as a bib for use at meal times or during dental treatment or a cover for seat head restraints, comprises a laminate of an absorbent sheet material and a fluid resistant layer. At least a portion of the outer facing surface of the fluid resistant layer is provided with an adhesive layer for sticking to the skin or clothing of a user. Several such devices may be provided as a stack or in a roll.

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1990.

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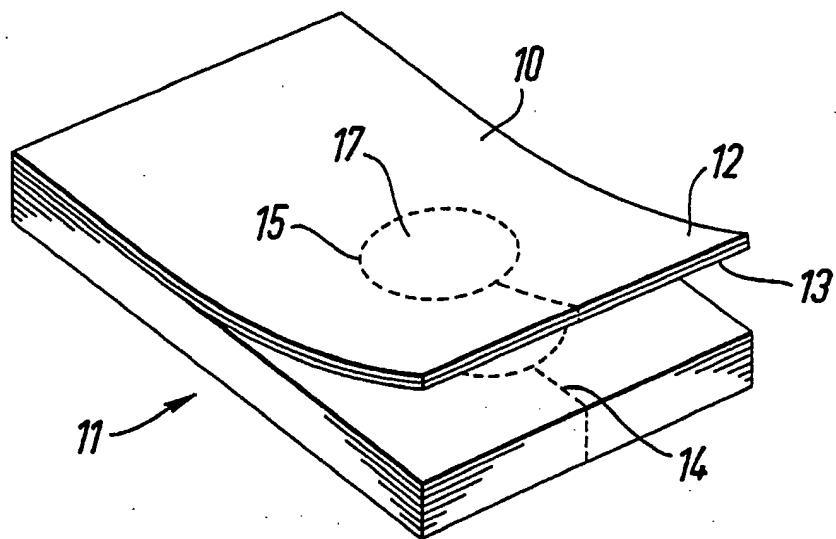


Fig. 1

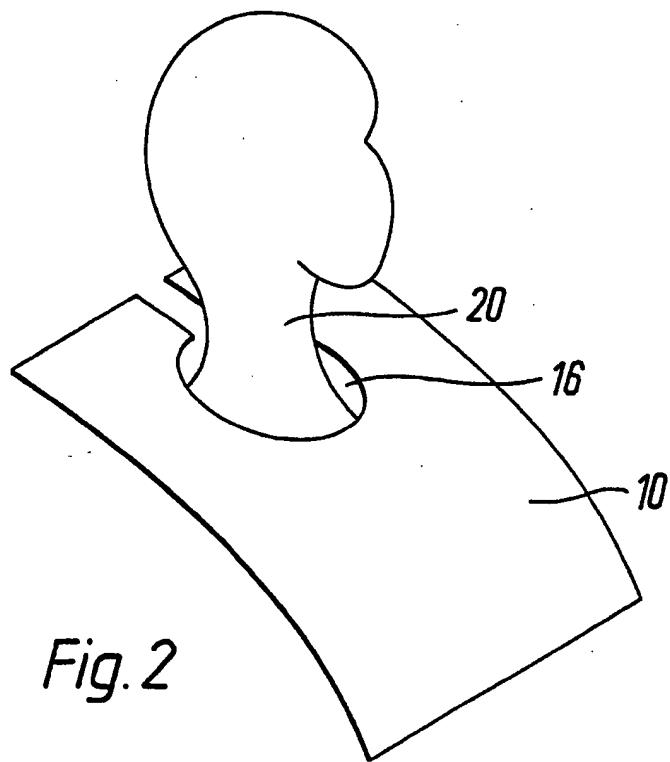


Fig. 2

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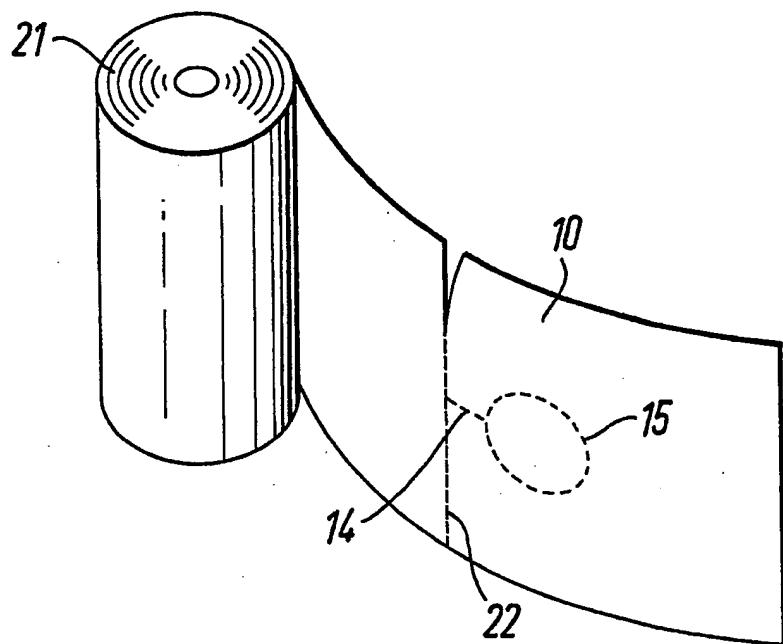


Fig. 3

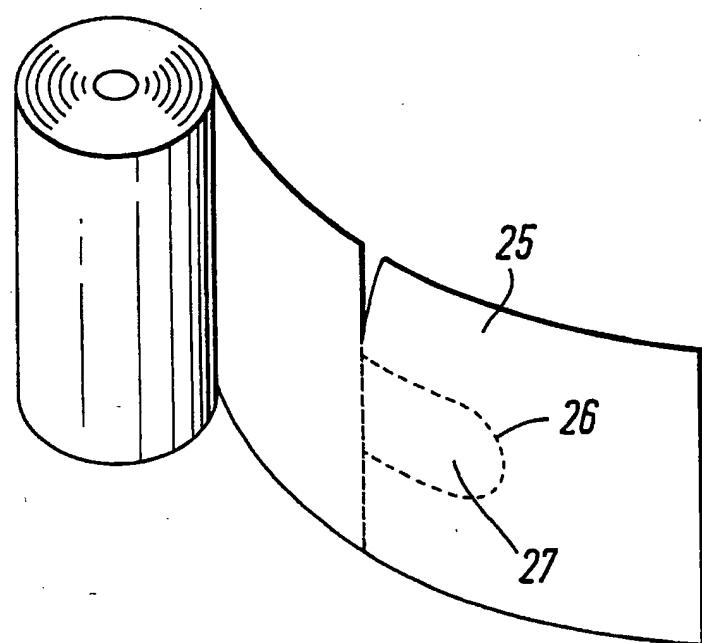


Fig. 4

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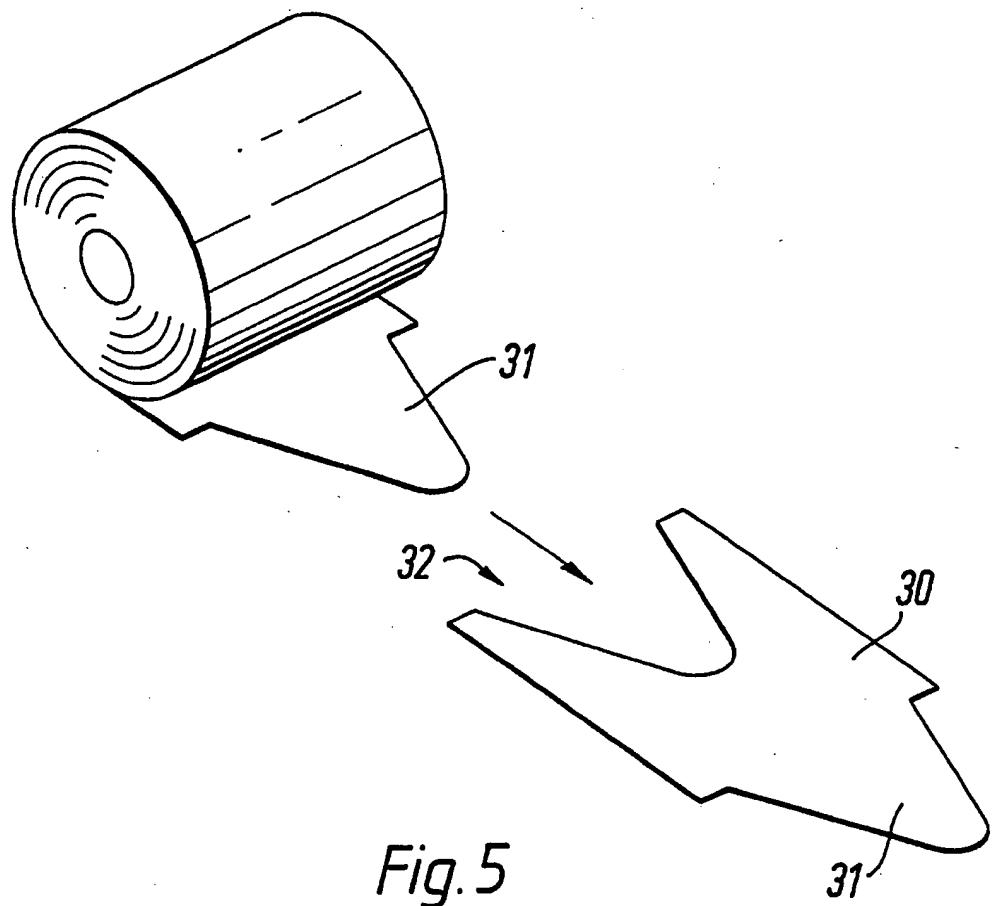


Fig. 5

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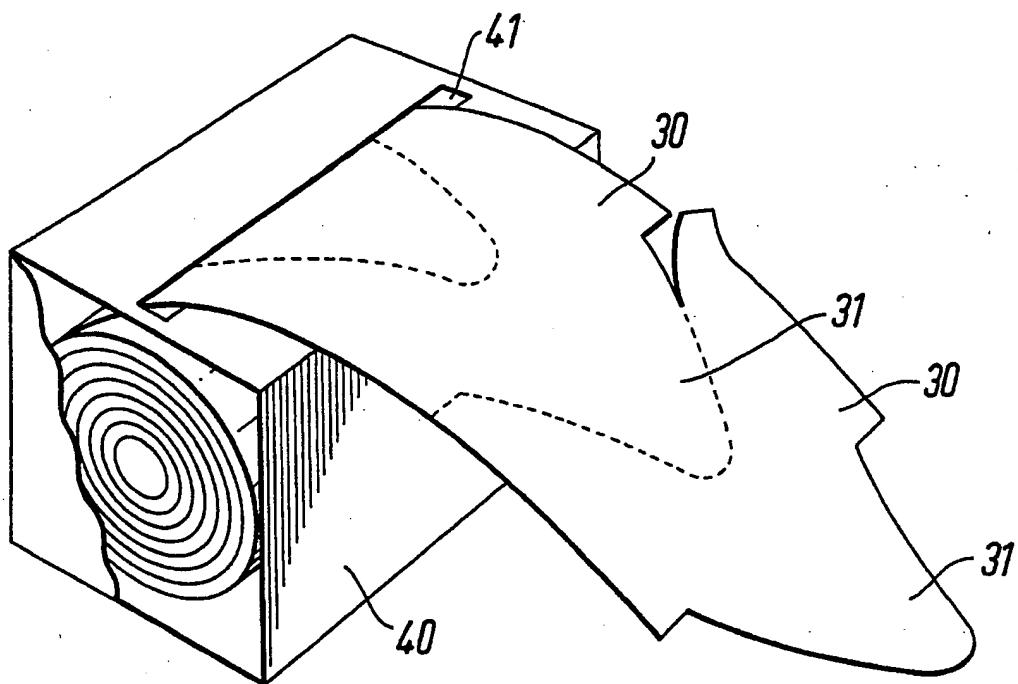


Fig.6

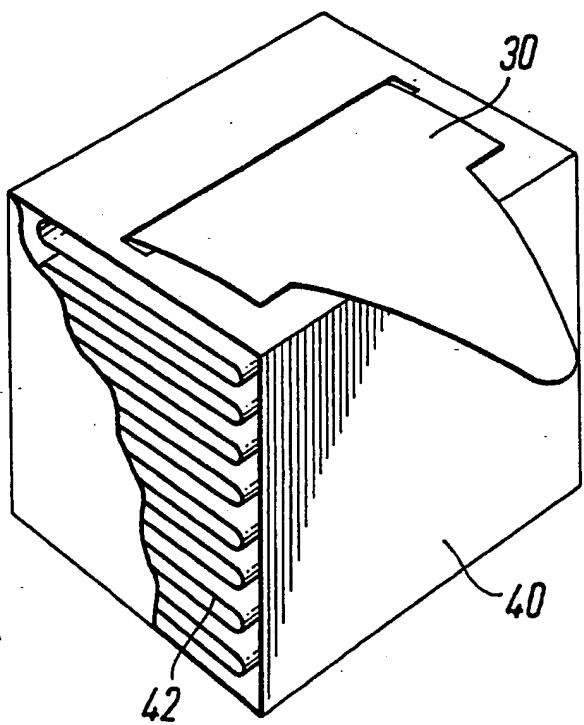
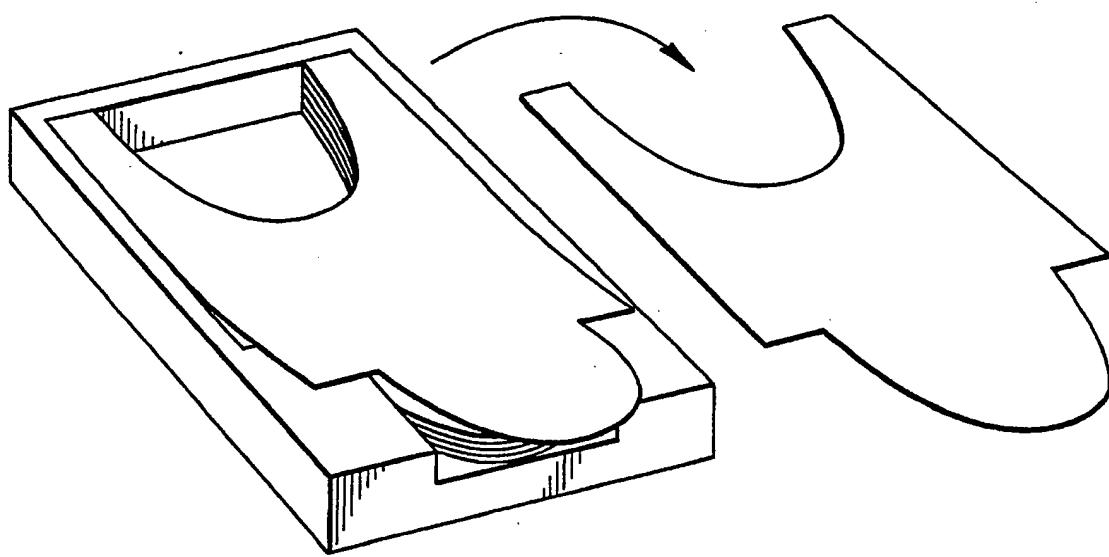


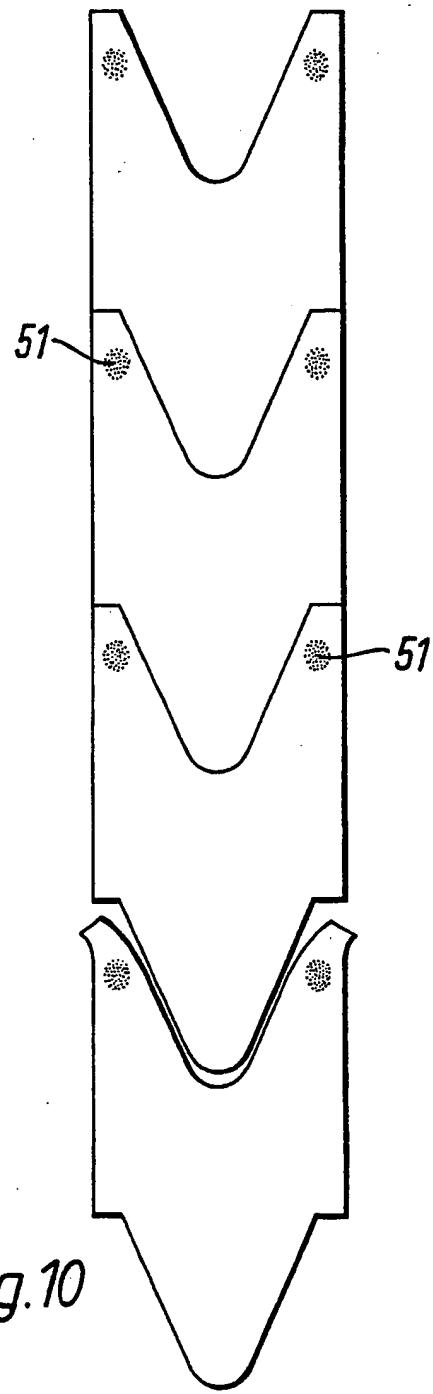
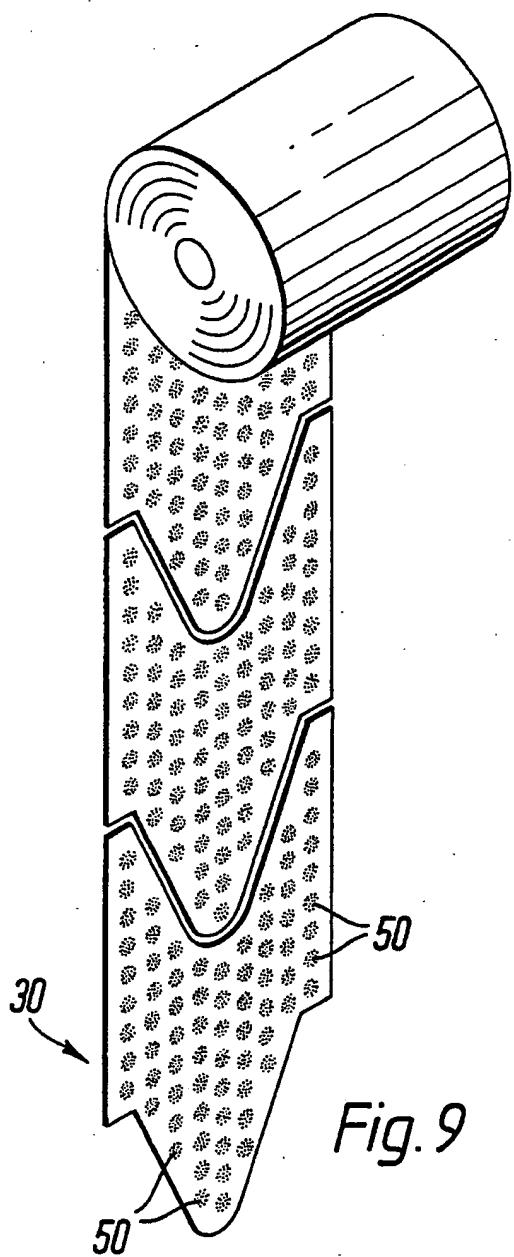
Fig.7

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*Fig. 8*

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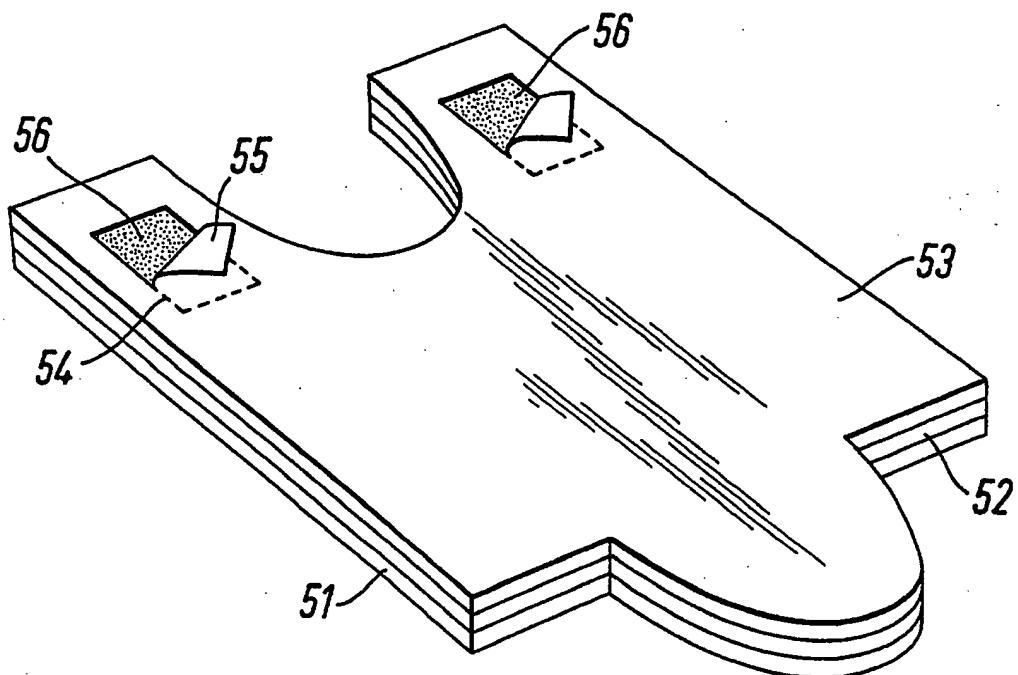


Fig. 11

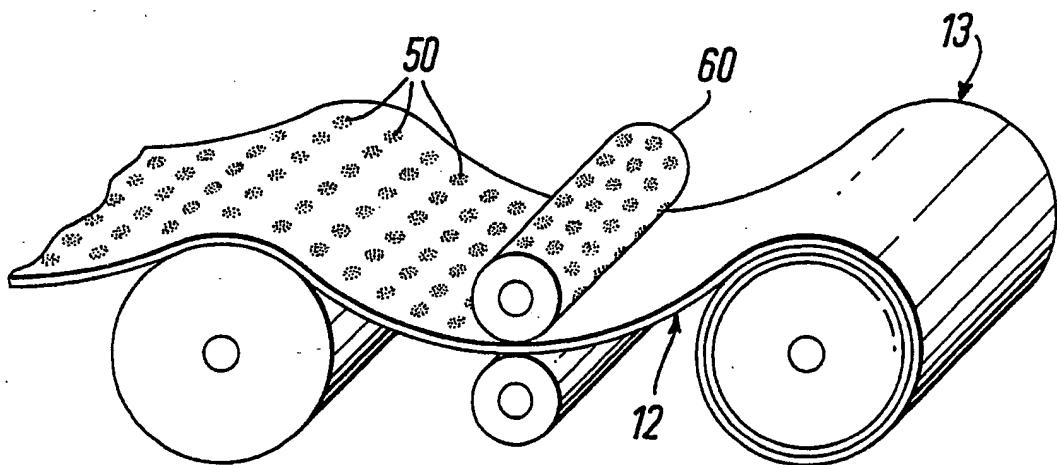


Fig. 12

PROTECTIVE DEVICES FOR CLOTHING AND OTHER FABRICS  
AND PROCESSES FOR THE PRODUCTION THEREOF

The present invention relates to protective devices for clothing and other fabrics. In particular it relates to devices such as bibs for use at meal times or other occasions such as during dental treatment when clothing may otherwise risk becoming soiled and also to disposable covers for seat head restraints.

Protective devices such as bibs for clothing and seat head restrain covers are known but suffer from various disadvantages. They are normally produced from cotton fibre or synthetic towelling materials which require cleaning, are unhygienic, expensive, complicated, inconvenient and labour intensive. Alternatively, they are simple paper devices through which fluids spilt on the devices can pass and so soil the fabric underneath. A disposable protective device would therefore be beneficial.

In its broadest sense, the present invention provides a disposable fabric protecting device comprising a laminate of an absorbent sheet material and a fluid resistant layer, wherein at least a portion of the outer facing surface of the fluid resistant layer is provided with an adhesive layer.

Preferably the adhesive layer comprises an adhesive wax or low tack adhesive. The adhesive layer may be applied as an entire surface covering to the back face of the fluid resistant layer; or as a uniform distribution of discrete portions of adhesive over the whole of the back face of the fluid resistant layer. In one embodiment, the adhesive layer is provided on its outer surface with a protecting release layer. Alternatively the device may in use adhere to the fabric by virtue of the electrostatic properties of the fluid resistant sheet.

Typically a plurality of such devices are assembled into a book form, pad, stack or roll.

The devices can serve many purposes, for example, a bib for protecting clothing, seat head restraint protective covers or napkins.

In the case of a clothing protecting device for placing around the neck of a wearer, adhesive may optionally be provided only in one or more regions of the device in the area which, in use, will be adjacent the neck.

The present invention also provides a method of applying adhesive to sheet materials to provide clothing and fabric protecting devices as described above.

In one embodiment of the method a laminate comprising an absorbent layer and a fluid resistant layer is coated on the outer surface of the fluid resistant layer with an adhesive applied by one of a pair of rollers through which the laminate passes.

Typically, the fluid absorbent layer is formed of paper, preferably a crepe paper. Typically the fluid resistant layer is a low density polyethylene.

In an alternative embodiment, a fabric protecting device is formed by applying to an absorbent sheet material the unprotected adhesive surface of film having an adhesive layer on each face thereof and a protective release sheet layer on one adhesive surface thereof. The release sheet layer may be provided with peelable portions such that in use only a portion of the adhesive layer need be revealed for application of the device to the fabric. Alternatively the entire release layer may be removed from the adhesive layer.

The above and other aspects of the present invention will now be illustrated, by way of example only, with reference to the accompanying drawings, in which

Fig. 1 illustrates, in the form of a pad, a first embodiment of a fabric protecting device in accordance with present invention in the form of a bib for protection of clothing;

Fig. 2 illustrates the embodiment of Fig. 1 in use around a wearer's neck;

Figs. 3 to 8 each illustrate alternative embodiments to that of Figs. 1 and 2;

Fig. 9 illustrates the application of an adhesive surface to a clothing protecting device in accordance with the present invention;

Fig. 10 illustrates a further embodiment of a bib in accordance with the present invention;

Fig. 11 illustrates a yet further embodiment of the present invention; and

Fig. 12 illustrates an embodiment of a method in accordance with the present invention.

Figure 1 illustrates a first embodiment of a fabric protecting device in accordance with the present invention in the form of a clothing protecting device or bib 10. Several such bibs may be provided bonded along a common peripheral edge in the form of a pad or book 11. As shown, the bib 10 preferably has a generally elongate form. Bib 10 comprises a laminate of an outer, absorbent sheet material 12 with a fluid resistant backing sheet 13. In the embodiment shown,

bib 10 is adapted to be worn around the neck 20 of a wearer by means of a tearable line of perforations 14 extending centrally from an edge of the bib 10 continuing as a ring 15 of perforations defining a neck aperture 16 with a removable disc 17. For the end user, pad 11 of bibs 10 may be provided with discs 17 within the defined neck aperture 16 removed or may be supplied with them intact. In the latter case, disc 17 of the bib 10 is removed prior to use by tearing along perforations 14 and 15 and can be used as a wipe, of particular use when feeding children.

In use, perforations 14 and 15 are broken and disc 17 removed by the user such that bib 10 can be placed around the wearers neck 20 as shown in Figure 2. Figure 3 illustrates an alternative embodiment wherein a plurality of bibs 10 are in the form of a roll 21 with a line of weakness such as perforations 22 between each bib 10. As illustrated, each bib 10 may otherwise have the same configuration as that described above with respect to a pad of bibs. That is, the bib has a generally rectangular shape having a line of perforations 14 extending centrally from one of the shorter edges thereof continuing in a ring 15 of perforations defining a neck aperture 16.

Figure 4 illustrates an alternative bib design to that shown in Figure 3. The bib 25, as is described above, has a generally rectangular form but is adapted to be worn around

the neck of a wearer by provision of a generally U-shaped or semi-circular line of perforations 26 defining a neck aperture and removable wipe 27. Both ends of the U-shape or semi-circle are formed along one short edge of bib 25 such that the line of perforations 26 is centrally positioned along that short edge.

Figure 5 illustrates a further bib design wherein the bib 30 has a tongue 31 extending from one edge thereof and a cut away portion 32 of corresponding dimensions formed in the opposite side of the bib that such that a plurality of such bibs can be provided in the form of a roll with perforations defining each bib, the perforations defining the tongue 31 of one bib also defining the cut away portion 32 of an adjacent bib.

Figure 6 illustrates that the roll can be supplied to the user in a box 40, dispensing bibs 30 through an aperture 41 in the box. Similarly, a fan-folded stack 42 of bibs 30 can be supplied in a box 40 (Figure 7).

Figure 8 illustrates an alternative to the embodiment shown in Figure 5 wherein bibs of substantially the same configuration as described above are supplied in a pack as is commonly used for paper tissues.

As described above, the bib being a fabric protecting device

in accordance with the present invention has a fluid resistant backing sheet 13 and an absorbent front sheet 12 so that liquids, grease or food falling on to the bib are prevented from contacting the wearer's clothing. Many materials are suitable for such purposes and will be apparent to those skilled in the art, PVC or polyethylene sheeting more especially low density polyethylene being particularly suitable and readily available.  $15\text{gm}^{-2}$  polyethylene has been found to provide advantageous results. Preferably, the fluid resistant material has a matt finish to assist in bonding of the adhesive layer and of the absorbent layer to the fluid resistant layer.

Similarly, many suitable absorbent sheet materials will be known to those skilled in the art. Sheet materials derived from wood or synthetic fibre pulp are suitable. Especially suitable are materials commonly used for so called kitchen towels. Such materials usually consist of two or more plies of thin sheets of paper, typically air-layered and embossed to form a matrix of closed cells between the sheets to provide additional bulk and absorbency. A paper weight in the order of  $50\text{gm}^{-2}$  has been found to be particularly suitable, particularly with a crepe, craft paper.

To the rear face of the fluid resistant backing sheet 13 is applied an adhesive such that the device can adhere to the wearer's clothing or skin sufficiently for it to remain in

position during use. The adhesive can be most conveniently applied after fusing of absorbent and fluid resistant layers.

Typically, the adhesive will be applied by a continuous spraying or roll-coating process such as flexography. Figure 12 illustrates a suitable process wherein discrete portions 50 of adhesive are applied from a transfer roller 60 to which the discrete adhesive portions house in turn be applied by a doctor roller (not shown). Conventional flexographic machinery such as the Nilpeters 2000 also combines cutters for die or kiss cutting or exchangeable with perforation equipment. The flexographic process also provides a facility for vacuum stacking any number of devices into a pad or stack, a pad being typically held together by virtue of a pressure sensitive adhesive.

The adhesive is preferably applied to the entire rear face of backing sheet 13 either as a thin covering or, as shown in Figures 9 and 12, as a substantially uniform distribution of discrete adhesive portions in the form of discs 50 or a matrix of small dots. Alternatively, only a portion of the backing sheet 13 has adhesive applied, preferably in the area adjacent the neck aperture (as is shown in Figure 10 at 51).

In the alternative embodiment of a fabric protecting device shown in Figure 11, a fluid resistant film 52 provided with an adhesive layer on both sides and a protective release

sheet 53 on one adhesive surface is applied to an absorbent sheet material 51 with the unprotected adhesive surface contacting the absorbent material 51. Adhesive film 52 with protective release sheet 53 are typically conventional materials such as those used for double-sided adhesive tape. In use, the protective release sheet 53 may be completely removed or as is shown, release sheet 53 may be provided with lines of weakness 54 such as perforations or kiss-cuts allowing smaller areas 55 of release sheet 53 to be peeled back and optionally removed to reveal the adhesive layer 56 below. The remaining backing sheet would then also act as a further fluid resistant layer to further reduce the risk of soiling the fabric over which the device is positioned. In the case of a bib, typically these areas 55 will be on the straps of the bib.

In a modification to the above embodiment (not shown) a small area of double-sided adhesive film is applied to the rear surface of a fluid resistant sheet material, in the region of the straps (as shown in Figure 11). A release sheet may then be applied to the fluid resistant film, with lines of weakness in the area of the portions of double-sided adhesive film.

The adhesive should be one which will securely adhere the bib to the clothing or skin of the wearer. Known low tack adhesives or adhesive waxes are suitable for this task. The

adhesive is preferably a pressure activated emulsion adhesive. The adhesive should not contaminate the clothing.

Certain adhesives may themselves, if applied as an entire surface coating to the back of a sheet of absorbent material perform the function of the fluid resistant layer without the need for a separate distinct fluid resistant layer.

The bib may be decorated pictorially, for example with designs which will appeal to children or for use by adults with a bow-tie and dress shirt design, or may carry advertising matter.

The fabric protecting device may also be rendered flame retardant by inclusion of a suitable additive at the manufacturing stage of one of the components of the device or by dipping the completed article or by pressing a roll of devices through a bath containing a flame retardant composition.

The fabric protecting device may also be used to protect the fabric of a seat head restraint for example in aircraft in which case the devices may be individually marked with seat numbers on trains or in residential homes or hospitals. Such devices may be manufactured as described above and could be rectangular in shape.

## CLAIMS:

1. A disposable fabric protecting device comprising a laminate of an absorbent sheet material and a fluid resistant layer, wherein at least a portion of the outer facing surface of the fluid resistant layer is provided with an adhesive layer.
2. A disposable fabric protecting device as claimed in Claim 1 wherein the adhesive layer comprises an adhesive wax or low tack adhesive.
3. A disposable fabric protecting device as claimed in Claim 1 or Claim 2 wherein the adhesive forms a continuous coating on the outer facing surface of the fluid resistant layer.
4. A disposable fabric protecting device comprising an absorbent sheet material provided on one surface thereof with a fluid resistant adhesive coating.
5. A disposable fabric protecting device as claimed in any one of Claims 1 to 4 wherein the adhesive layer is further provided with a protective release sheet.
6. A disposable fabric protecting device as claimed in any one of Claims 1 to 5 for the protection of clothing adapted

to be worn around the neck of a wearer by means of perforations in the laminate defining a neck aperture with removable laminate portion.

7. A fabric protecting device substantially as herein described with reference to the accompanying drawings.

8. A method for the manufacture of a fabric protecting device as claimed in Claim 1 comprising laminating a fluid absorbent sheet material and a fluid resistant sheet material and applying to the outer facing surface of the fluid resistant material a low tack adhesive or adhesive wax.

9. A method as claimed in Claim 8 wherein the fluid resistant sheet has a layer of adhesive on both sides thereof; the first of which adhesive layers is further provided with a protective release layer; the fluid resistant sheet being laminated to the fluid absorbent sheet by means of the second adhesive layer.

10. A method for the manufacture of a fabric protecting device substantially as herein described with reference to the accompanying drawings.

## ABSTRACT

PROTECTIVE DEVICES FOR CLOTHING AND OTHER FABRICS  
AND PROCESSES FOR THE PRODUCTION THEREOF

The present invention relates to protective devices for clothing and other fabrics. In particular it relates to devices such as bibs for use at meal times or other occasions such as during dental treatment when clothing may otherwise risk becoming soiled and also to disposable covers for seat head restraints. There is described a disposable fabric protecting device comprising a laminate of an absorbent sheet material and a fluid resistant layer, wherein at least a portion of the outer facing surface of the fluid resistant layer is provided with an adhesive layer. There is also described a method for the manufacture of such a device comprising laminating a fluid absorbent sheet material and a fluid resistant sheet material and applying to the outer facing surface of the fluid resistant material a low tack adhesive or adhesive wax.

## Patents Act 1977

Examiner's report to the Comptroller under Section 17  
(The Search report)Application number  
GB 9421122.4

## Relevant Technical Fields

(i) UK Cl (Ed.N) A3V; A4M

(ii) Int Cl (Ed.6) A41B 13/10; A41D 1/20, 3/08, 13/04; A45D 44/08; A47C 31/10

Search Examiner  
D BUCKLEYDate of completion of Search  
9 JANUARY 1995

## Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii)

Documents considered relevant following a search in respect of Claims :-  
1 TO 10

## Categories of documents

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Category	Identity of document and relevant passages		Relevant to claim(s)
X	GB 2220557 A	(COMERFORD) whole document	4 and 6 at least
X	GB 2212710 A	(PITT) whole document	1 and 2 at least
X	EP 0499571 A1	(LAYSTIL SA) whole document	4 at least
X	US 4423523	(BODNER) whole document	1, 2, 5 and 6 at least
X	US 4306316	(KLEPPER) whole document	1, 2, 5 and 8 at least
X	US 3871027	(HOLSOPPLE) whole document	1, 2 and 5 at least

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